CLAIMS

1. A probe card comprising:

a plurality of contact terminals in contact with an electrodes arranged on a test object;

wires led out of the contact terminals; and

a plurality of peripheral electrodes electrically connected to the wires and to electrodes of a multilayer wiring board;

wherein the electrodes of the multilayer wiring board and the wires are electrically connected to each other through the peripheral electrodes.

2. A probe card according to Claim 1,

wherein the contact terminals and the peripheral electrodes are pyramidal or truncated pyramidal.

3. A probe card according to Claim 1,

wherein the plurality of the peripheral electrodes and the multilayer wiring board are arranged in a grid.

4. A probe card according to Claim 1,

wherein the contact terminals and the peripheral electrodes are formed with holes by anisotropic etching of a crystalline board as a mold member.

5. A probe card comprising:

a multilayer wiring board electrically connected to a tester for testing electrical characteristics of a test object; and

a probe sheet having a plurality of peripheral electrodes connected to electrodes of the multilayer wiring board and a plurality of contact terminals in contact with electrodes of the test object;

wherein the probe sheet further includes at least a first metal film formed in a manner as to surround the plurality of the contact terminals and at least a second metal film formed in a manner as to surround the first metal film.

6. A probe card according to Claim 5,

wherein the contact terminals and the peripheral electrodes are pyramidal or trancated pyramidal.

7. A probe card according to Claim 5,

wherein the first metal film and the second metal film are formed between the plurality of the contact terminals and the plurality of the peripheral terminals.

8. A probe card according to Claim 5,

wherein an area between the first metal film and the second metal film is more flexible than an area formed with selected one of the first metal film and the second metal film of the probe sheet.

9. A probe card according to Claim 5,

wherein the first metal film has a circular outer periphery.

10. A probe card according to Claim 5,

wherein the probe sheet further includes a third metal film formed in such a manner as to surround the plurality of the peripheral electrodes, the third metal film having at least a positioning hole.

11. A probe card according to Claim 5,

wherein the probe sheet further includes a ground layer and a power layer electrically connected to the wires, and

wherein the wires connected to selected one of the ground layer and the power layer are wider than the wires connected to neither the ground layer nor the power layer.

12. A probe card according to Claim 5,

wherein the probe sheet further includes a third metal film formed in a manner as to surround the plurality of the peripheral electrodes, the third metal film having at least a positioning hole,

wherein the multilayer wiring board further includes at least a positioning hole, and

wherein the plurality of the peripheral electrodes and the electrodes of the multilayer wiring board are connected to each other in position by inserting a pin through the positioning hole of the third metal film and the positioning hole of the multilayer wiring board.

13. A probe card according to Claim 12,

wherein the plurality of the peripheral electrodes and the electrodes of the multilayer wiring

board are arranged in a grid.

14. A probe card according to Claim 5,

wherein the contact terminals and the peripheral electrodes are formed using, as a mold member, a plurality of holes formed by anisotropic etching in a crystalline board.

15. A probe card according to Claim 5, further comprising a means for applying pressure to an area of the probe sheet formed with the plurality of the contact terminals,

wherein the pressure application means is arranged in such a manner that an area formed with the first metal film and the area formed with the plurality of the contact terminals are tiltable with respect to an area formed with the second metal film.

16. A semiconductor testing device comprising:

a sample table for mounting a test object; and

a probe card having a plurality of contact terminals in contact with electrodes of the test object and connected electrically to a tester for testing electrical characteristics of the test object;

wherein the probe card further includes a wire led out from each of the contact terminals, and a plurality of peripheral electrodes connected electrically to the wires and connected to the electrodes of the multilayer wiring board, and

wherein the electrodes of the multilayer

wiring board and the wires are connected electrically to each other through a plurality of pyramidal or truncated pyramidal peripheral electrodes.

17. A method of producing a semiconductor device, comprising the steps of:

building a circuit in a wafer and forming a plurality of semiconductor elements;

testing electrical characteristics of each semiconductor element; and

dicing and separating the wafer into the semiconductor elements;

wherein the electrical characteristics of each semiconductor element are tested using a probe sheet including the plurality of the contact terminals in contact with the electrodes of the semiconductor element, a first metal formed to surround the plurality of the contact terminals and a second metal film formed to surround the first metal film, and

wherein, while applying pressure to an area formed with the first metal film of the probe sheet and an area formed with the plurality of the contact terminals, making the plurality of the contact terminals into contact with the electrodes of the semiconductor element thereby to perform the testing.

18. A method of producing a semiconductor device according to Claim 17,

wherein the plurality of the contact terminals are pyramidal or truncated pyramiral.

19. A method of producing a semiconductor device according to Claim 17,

wherein the plurality of the contact terminals are formed using, as a mold member, the holes formed by anisotropic etching of a crystalline board.

20. A method of producing a semiconductor device, comprising the steps of:

building a circuit in a wafer and forming a plurality of semiconductor elements;

testing electrical characteristics of each semiconductor element; and

dicing and separating the wafer into the semiconductor elements;

wherein the electrical characteristics of each semiconductor element are tested using a probe card having a probe sheet including a plurality of contact terminals in contact with electrodes of the semiconductor element, a first metal film formed in a manner as to surround the plurality of the contact terminals and a second metal film formed in a manner as to surround the first metal film, while making the plurality of contact terminals in contact with the electrodes of the semiconductor element.

21. A method of producing a semiconductor device according to Claim 20,

wherein the probe card further includes a means for applying pressure to an area formed with the first metal film and an area formed with the plurality

of the contact terminals of the probe sheet, and

wherein the electrical characteristics of each semiconductor element are tested by the pressure application means applying pressure to the area formed with the first metal film and the area formed with the plurality of the contact terminals of the probe sheet while making the plurality of the contact terminals in contact with the electrodes of the semiconductor element.

22. A method of producing a semiconductor device according to Claim 20,

wherein the plurality of the contact terminals are pyramidal or truncated pyramidal.

23. A method of producing a semiconductor device according to Claim 20,

wherein the plurality of the contact terminals are formed using, as a mold member, the holes formed by anisotropic etching of a crystalline board.